GEOGRAPHIC NEWS BULLETINS

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Photograph by International

EGYPT'S TRADEMARK NOW STANDS FOR LIBERTY

The Great Pyramid at Giza reflects a civilization some 5,000 years old, where the shepherd waters his sheep—many of them black—beside the Nile (see Bulletin No. 1).

HOW TEACHERS MAY OBTAIN THE BULLETINS

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Egypt Lets Freedom Ring

THE country that was among the very first in world history to develop a national government is at last to become free. Egypt is acknowledged by treaty with England as an independent country, with the latter as an ally. Thus the land of the Pharaohs, of Tutankhamen, and of Cleopatra comes into its own again.

Among the first in history, Egypt has long been foremost in the literature of travel folders. Winter visitors have flocked to see the country that the Nile built, to be jerked breathlessly up the Pyramids, to seek out "the knotty crocodiles" that are supposed to lie and blink among the bulrushes of the Nile, to shiver at mummies, to draw city-dwellers' romance from camel caravans and vast expanses of tawny desert flecked with oases of green date palms.

They find that Egypt has no crocodiles now except in poems about it. The sacred ibis is missing among the long-legged herons and cranes that fish in the Nile shallows. Lotus blossoms, beloved of the ancients, are now found only in the Delta. The papyrus reed, which gave the world some of its most valuable written records and gave paper its name, is virtually extinct in the land.

Part of Egypt Is in Asia

Donkeys are five times more numerous than camels. But the long-eye-lashed, vile-tempered "freight cars of the desert" still outnumber automobiles six to one. In the land that practically invented writing, developed algebra and geometry for surveying flooded fields, and had one of the largest libraries in the world 19 centuries ago, only about one person out of five can now read and write.

Egypt is the most publicized African country, and perhaps among the least understood. Known since the beginning of history—in fact, history is thought by some to have started there—parts of it are still utterly unknown.

Thought of as a tropical country typical of parched northern Africa, most of Egypt is in the temperate zone. Cairo, the capital and Africa's largest city, is farther north than Houston, Texas. And part of Egypt is not Africa at all, but Asiatic—the peninsula of Sinai, scene of the wanderings of the Children of Israel.

Miraculous River That Lives without Rain

Egypt is six times as large as England, and would equal Texas and Colorado combined. Habitable Egypt, however, extends no farther east and west than the waters of the Nile can be induced to go, for the country is fourteen-fifteenths desert. The real country, the part which is responsible for the dawn of Mediterranean civilization, is smaller than Armenia and barely larger than Belgium. But so fertile is this winding shoestring, the richest area in Africa according to some reports, that it supports one of the densest populations in the world—fifteen times as many inhabitants as Armenia and half again as many as tightly-packed Belgium.

Food is at such a premium that space cannot be spared to raise tobacco, or to graze many animals, so that meat is almost a luxury to the large vegetarian population. On a slim diet of greenish bread, onions, and yellow-pulp watermelons, the true Egyptian is still a small-scale farmer, looking and living much as he is represented in wall paintings thousands of years old (see illustration, page 2). Wearing only the white apron made familiar by pictures on papyrus and mummy cases, he is a living hieroglyphic, suggesting but not solving the mysteries of Egypt's past.

UMI

Photograph by Gaddis and Seif

"COMIC STRIPS" SOMETIMES ENLIVENED ANCIENT EGYPTIAN TOMBS

Color and humor accompany Menna, estate inspector for one of the kings of the 18th Dynasty, to his tomb among the ruins of ancient Thebes. To make the king's overseer feel at home in his final quarters, the walls of his tomb were decorated with scenes typical of his life. "Reading" from lower right to the left and upwards, one can patch together a story of plowing, then cutting grain, gathering it into baskets, and finally winnowing it in front of the overseer's shelter (see Bulletin No. 1).

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Through the Mails with the Christmas Cards

POST OFFICES throughout the country are preparing for their annual Christmas "lining"—lines of people buying stamps for Christmas cards, and other longer lines of people with packages to be weighed in through the window which accepts almost everything for transport from a pill box to a truck tire. If they ignore warnings to "mail early," these post office shoppers may find their faces drawn in lines of weariness from waiting in line.

They invariably rejoice, however, with a relieved "That's that!" when each Christmas card is safely dropped through the letter slot or into a mail box. But that isn't that; the real job of handling the Christmas mail is barely begun.

Each card must be postmarked, sorted according to the direction it is to travel, possibly re-sorted according to destination, tied with twine into a neat package with its fellow travelers, locked in a mail pouch, carried to a train or plane, possibly re-sorted in a mail car while speeding over the rails, tossed from train or plane to mail truck and carried to another post office, where it is sorted again and again until it reaches the proper carrier and the proper place in his packet of mail for the next delivery.

A Billion Letters and Parcels Handled in an Hour

The Christmas job of the postal system of the United States involves almost unimaginable figures. Even in normal times "the biggest business in the world," with more than 45,000 offices, handles a billion letters and parcels each hour. But Christmas multiplies mailing by two or three. The post office of Washington, D. C., typical of most of the larger cities, reports that letters alone show a Christmas boom of 135 per cent, despite a decrease of official mail.

To speed departing mail, large city post offices can call on the superhuman skill of four types of mechanical devices: the electric cancellation machine, the mechanical "facing" table, systems of overhead conveyors, and pneumatic tubes.

To respond to the annual deluge of Christmas cheer, however, no additional machinery is installed. Instead, all hands and many extras are called to man existing equipment, and buckle down to a steady 24-hour grind.

With the electric cancellation machine, the machine age made its debut into the post office almost a half-century ago. When fed a handful of letters at a time, all face forward, it postmarks them at the lively clip of 20,000 an hour. A new model, chic in gray paint and dazzling with chromium, is streamlined, with clockwork of rollers housed in protective metal covers, so that it cannot possibly bite the hand that's feeding it.

The "business" end of a cancellation machine is a sloping top somewhat larger than the average school desk, mounted on a waist-high pedestal with a small electric motor bulging out in the rear. The latter channel at the top flips envelopes through from left to right by means of revolving wheels, and stamps them with the familiar black banner showing place and time. A dial on the front, half-brother to an auto speedometer, records the number of cancellations up to 999,999, then patiently starts all over again.

Small Christmas Cards More Trouble Per Square Inch

The time shown on the postmark, which settles so many arguments about when absent-minded persons mailed their letters, is set by hand. Every half hour, an attentive clerk moves the time-stamp a half-hour forward according to the clock on the wall; at 5 o'clock, for instance, the machine begins stamping 5:30 and continues until 5:29.

In some post offices a mechanical "facing" table routes mail toward the cancellation machine. With its aid, a very few men can plow through tall snowdrifts of envelopes. Without leaving his place a clerk can pick up bushels of letters, face them toward himself by hand, and drop them into a narrow trough at the table's edge. Here a moving belt takes the mail straight to the cancellation machine. There are two troughs, one for normal letter-size envelopes, and another for the longer legal size, since they must be cancelled in different machines.

At the facing table, too, clerks lay aside first-class mail which a cancellation machine would be unable to digest—packages or envelopes which are extra large, extra small, or extra thick. Petite Christmas cards, half-covered by a single stamp and hailed as "cute" by the public, are just gnats in the eyes of the postal system; they have to be postmarked by hand.

Post offices large enough to suffer from indoor traffic trouble, give the mail right-of-way in a series of elevated conveyor systems. Like giant flat-bottomed troughs, varying in width

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One source of the awe which Egypt has inspired is its important place in the Bible. Before children are old enough to know that there is more of Africa than Egypt, they learn the adventures of Jacob, Joseph, Moses, and the Israelites amid its plenty and its cruelty. They note that Egypt is the only country outside his native Palestine in which the New Testament describes a sojourn of Jesus.

The source of mystery to the ancients was the Nile, flowing serenely almost a thousand miles through Egypt's share of the Sahara, without a tributary, without rain, and fed by they knew not what unearthly springs.

Wheat was widely cultivated in the days when Joseph tided the country through depressions with what may be the first public relief on record, but now shares leadership with a relative newcomer from the western hemisphere, maize. The chief crop, however, is cotton, which makes Egypt one of the three most important cotton growing countries in the world.

Note: Egypt's historic and modern-day aspects are described and illustrated in the following: "Suez Canal: Short Cut to Empire," *National Geographic Magazine*, November, 1935; "The Geography of Money," December, 1927; "Flying over Egypt, Sinai and Palestine," September, 1926; "The Land of Egypt," March, 1926; "Cairo to Cape Town, Overland," February, 1925; and "Peoples and Places of Northern Africa" also "Along the Nile, Through Egypt and the Sudan," October, 1922.

See also in the GEOGRAPHIC NEWS BULLETINS: "Cairo, City of Minarets, Welcomes a Change in Government," week of January 6, 1936.

Bulletin No. 1, December 7, 1936.

Photograph by J. Blackburne

EGYPT'S DELTA IS THE NETHERLANDS—IN REVERSE

Canals and floods and patchwork fields the two countries have in common. But The Netherlands is thrusting the water out; Egypt conserves it. Floods are the terror of The Netherlands; in Egypt the Nile flood inspires an annual festival. The Nile is the real hero of Egypt's long history, for it actually built the habitable part of the country—with Ethiopian soil! Perpetual irrigation, which conserves water far beyond the time of the Nile's annual 13-foot rise, is achieved by means of four barrages, or damlike obstructions, which help turn the water toward irrigation canals, like those in the picture. It is evident that farms are small; the majority of the landowners have less than an acre.

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Koala, The Living Teddy Bear of Australia

FROM far-away Australia comes a plea for American aid in the preservation of one of the quaintest and most attractive members of the animal kingdom—the Koala, or Australian teddy bear.

Koalas are found in eastern and southeastern Australia, but do not occur on any of the neighboring islands or in the western half of the continent. They were probably once the most common animals in the Australian bush, but about 40 years ago a widespread epidemic overtook them and they died by thousands.

They also were hunted extensively for the sake of their warm, thick fur, and as a result are now extinct in New South Wales. A few hundred are still to be found in Victoria, in carefully protected localities, and a fair number remain in Queensland. Little is known of the nature of the disease that so nearly exterminated them, but study is being given the subject now, with a view to preserving the remnants of this formerly numerous species.

Gray Fur and Black Nose

The Koala has a thick, grayish-colored fur, a prominent black nose, and stands about two feet high. A good specimen weighs about 30 pounds. It is one of the most inoffensive animals imaginable, doing no harm or damage to anyone or anything.

Essentially a tree-dwelling and night-roving animal, it spends its time in the branches of certain species of eucalyptus trees, where it feeds at night upon the tender young leaves. If approached, it will sit and stare at the intruder with a surprised expression, and only if danger threatens will it climb to the topmost branches (see illustration, next page). The Koala is rather inactive, especially in summer, and often sits in the fork of a tree, sleeping the daylight hours away.

Koalas have five toes on each foot, and each toe is armed with a curved, needle-sharp claw. The toes are in groups of twos and threes, the two claws being in the form of a double thumb. They are thus enabled to climb easily and also to grasp the branches of a tree and pull them down for the purpose of feeding on the leaves.

Koalas Never Take a Drink!

The leaves of certain kinds of the Australian eucalyptus (gum trees) form their staple diet, although occasionally they feed on the barks of other trees and on sphagnum moss, perhaps as a tonic or medicine. They never drink water, but are apparently able to obtain enough moisture from feeding on the juicy gum shoots from which the commercial eucalyptus oil is extracted.

Koalas are such quaint and attractive little creatures that they are much in demand as household pets. They are very easily tamed, but as they grow older they are careless of the fact that their claws have a needlelike sharpness, which will easily penetrate the thickest and strongest cloth.

Although when living in the bush they take no liquid, in captivity they quickly acquire a taste for weak sweetened tea and starchy foods. This depravity is the cause of their undoing, for if given such things in mistaken kindness, they soon begin to lose condition and in a few months die from indigestion. Even when fed only on their normal diet of eucalyptus leaves, they are difficult to keep alive in captivity.

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from a foot to a yard, they hang from the ceiling on metal rods. Endless belts of rubberized fabric serve as moving tracks within a metal framework. On these "letter escalators," a Christmas card can find its way all alone from one end of a post office to the other, and wind up safely on the facing table where it belongs.

Letter Subways and Letter "Elevateds"

Conveyors also carry packages, bundles of newspapers, and whole sacks of mail to the proper spot in the post office, then can take empty sacks to a store room. They not only relieve floor congestion, but save much loading and unloading. A special conveyor which brings printed matter to the Washington Post Office from the Government Printing Office, where trucks and elevators were formerly used, reduces the amount of handling for each piece from six times to two.

Remembering that mail sacks may weigh as much as 125 pounds each, and that official mail leaving Washington totals 75 tons a day, postal officials hail this as one of the best time- and labor-saving conveyors in use.

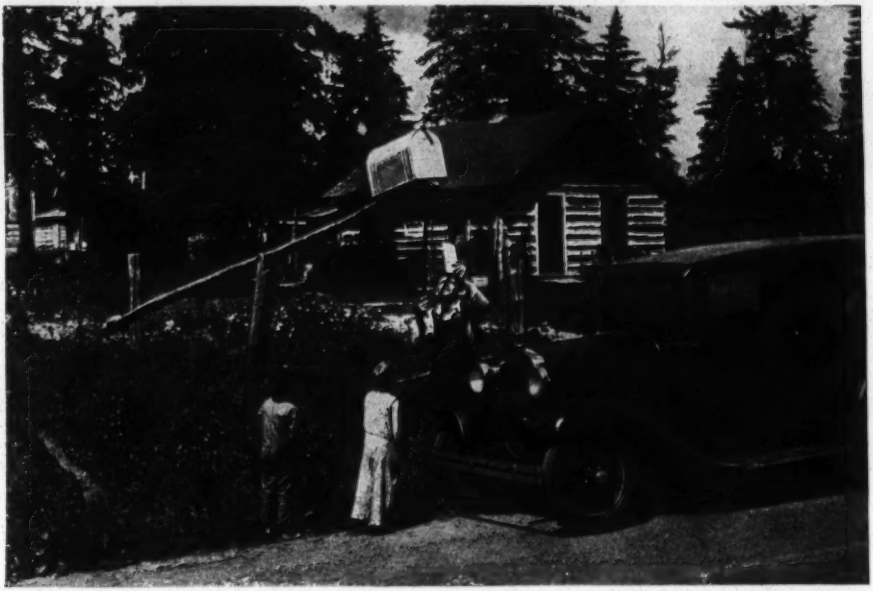
Many large cities, such as Chicago, New York, Boston, St. Louis, Atlanta, Cincinnati, Cleveland, and St. Paul, which have post offices over railroad stations, use conveyors to carry outgoing mail directly to the train platforms. In Washington, where the post office and the station are side by side, the mail travels its last quarter-mile in electric trucks.

To be sure that conveyors are not holding out any letters, they must pass a daily examination.

So that the mail may go through, in spite of city traffic congestion, at least two cities have a system of pneumatic tubes for communication between branches. Boston has about a mile and a half of "letter subway." New York uses 26 miles of it, threading its way through the tangle of pipes and wires four feet underground.

These tubes, of cast iron, are an inch thick and eight inches in diameter, and are joined like water pipes. They speed along more than half of New York's tremendous letter traffic, the heaviest in the country. As many as 500 letters can be packed into a single metal carrier about the size of a small ice-cream freezer, and shot through the tubes by compressed air at a rate of a mile in two minutes.

Bulletin No. 2, December 7, 1936.



Photograph by Clifton Adams

END OF AN ODYSSEY

The letter reaches, via rural free delivery, the end of its three-cent trail, after being handled from three to several dozen times. Yet errors are so rare that the postal service can claim to be 99.9999 per cent correct. On this Minnesota farm, near Little Fork, the mailbox travels a bit, too, up and down, attached to an old-fashioned sweep, so that its lofty perch will save it from being buried under winter snow drifts when road plows clear the highway.

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Orchids, Snowy Peaks, and Picturesque Mountaineers in the Great Smokies

RECENT dedication of the Joyce Kilmer Memorial Forest, between Knoxville and Chattanooga, Tennessee, in honor of the poet who wrote "Trees," again directs attention to a huge region of virgin forest and little-known peaks, extending over parts of four States.

Typical of the area is the Great Smoky Mountains National Park, straddling the Tennessee-North Carolina boundary line. Although not yet dedicated, recent figures show a 69 per cent increase in visitors to the Park this October over the same month last year.

"Fall coloring is undeniably a drawing card in the Great Smokies," points out Leonard C. Roy, in a communication to the National Geographic Society. "But the Great Smokies is really an all-year park. Winter visitors view sweeping snow-blanketed slopes, studded here and there with clumps of green conifers. In the spring some blossoming plants make a bold debut before the last snow has melted from lofty peaks. From then until June, 1,500 species of plants, shrubs, and flowering trees weave colorful patterns over the Park area.

Twenty-Two Species of Orchids and as Many of Violets

"So diversified are the wild flowers that visitors from many sections of the United States find species that grow abundantly in their own fields and woodlands, among others that are unfamiliar to them. Twenty-two orchids find a natural habitat in these mountains; there are 50 kinds of lilies; 7 of trilliums; 22 of violets; and 5 of magnolias. The native wild orchids, though smaller than the cultivated and tropical species, have all the exquisite form and coloring of their better known cousins.

"That the Great Smokies is a frontier of botany is shown by the recent discovery, in a remote wild part of the Park, of a shrub with a stem 82 inches in diameter. There are 142 known species of trees in the area, with additions constantly being made to the list.

"Half of the Park is a forest primeval. Tulip trees grow six and seven feet in diameter. Mountain laurels 18 inches thick, and as high as two-story buildings, are not uncommon. The main stem of one grapevine in the Park is more than five feet in circumference.

Bear Meat and Cornbread on Mountain Diet

"The region is a veritable paradise of the angler, with its 600 miles of trout streams to whip for the wary rainbow and brook trout; the naturalist may revel in the great variety of birds and animal life in the region; for the hiker, several hundred miles of trails have been thrust into the wilderness; and the motorist from modern highways may scan eye-filling panoramas of wilderness solitudes.

"For probably two decades, mountain families will add human interest to the Great Smokies, for some of them will be permitted to remain in the Park area as long as they live. Descendants of pioneers who braved the arrows of cunning Cherokees when they migrated to the mountains from North Carolina and southwest Virginia, these mountain families were, until recently, self-sufficient. A few

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The Koala, like the kangaroo, is a marsupial. In a pouch the single cub—"Joey," in the language of the bush—is sheltered and fed for some months. When about six inches in length, it begins to leave the pouch and spend its time in its mother's arms, not clasped by the mother, because she needs all her toes for hanging onto the trees, but clinging to her thick fur by means of its own sharp little claws.

When in Danger, Climbs on Mother's Back

This is the usual position of the young until it is big enough to look after itself; but if danger threatens, necessitating active climbing on the part of the mother, the youngster quickly clambers around upon her back, so as not to hamper her movements. There it hangs on securely while she climbs to safety.

Note: See the article "The Koala, Or Australian Teddy Bear," in the *National Geographic Magazine*, for September, 1931. See also "Beyond Australia's Cities," December, 1936; and "Capital Cities of Australia," December, 1935.

Photograph by F. Lewis

AUSTRALIA'S LIVING "TEDDY BEARS" ARE EXPERT CLIMBERS

When a young koala reaches the age of six to ten months, it leaves its mother's back and strives for higher places. Getting up in the world means food as well as exercise, because the koala diet consists largely of eucalyptus (gum tree) leaves.

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Roads Try on New Topcoats of Cotton, Salt, Iron, Rubber, and Molasses

AN ECONOMICAL Scotsman gave London lessons in cheaper road building. Now his name—MacAdam—is one of the longest in highway history, for it has entered the language as a type of surfacing that covers miles and miles.

His countrymen in Ayr, Scotland, paid tribute to him in November, the centenary of his death, which occurred on a road inspection tour. The broken stone surface on properly drained roads, which he advocated, is in use on thousands of miles in the United States alone. But he spent years in observation and experiment before demonstrating the macadamized surface, on approaches to Blackfriars and Westminster Bridges in London.

Other road surfaces are being tested today by modern highway pioneers, in preparation for their first mile. And, judging by the time needed to accomplish it, the first mile must be the longest.

A Built-in Cotton Umbrella for Southern Roads

For ten years now King Cotton has been taking to the open road. Coarse cotton strips, more than two yards wide, are unrolled over asphalt and crushed stone; more asphalt and crushed stone are then packed down on top, holding the cotton like icing between cake layers. The fabric does not alter the appearance of the road; it is exclusively cotton underwear. Here it serves as a built-in umbrella, protecting the road from the ravages of rain, for weather wears roads out faster than the heaviest traffic.

This cotton-lined fashion is being tried in two dozen States, most of them in the South. Here plantation-to-market routes can truly be for cotton, by cotton, and through cotton, since negroes are picking cotton in the very fields beside which engineers are laying a cotton innersole on the highway over which bales of cotton will be taken to market. Alabama and North Carolina lead in this type of road-building, which requires six or eight bales of cottom for a mile of highway.

To tame the slippery highway, some engineers sprinkle salt on its surface. A strong dose of rock salt on a road of clay and gravel has been reported to hold the surface firm and smooth, shedding water enough to retard skidding. About a hundred sample miles have been salted down in ten States, notably New York.

Rubber Cures Hardness, Aluminum Cures Softness, Molasses Cures Dustiness

Bouncing along the highway may eventually be free of the bump of landing, if rubber roads are more widely used. Automobiles in Queensland, Australia, find tires less essential than elsewhere, for some roads there are just long flat rubber tires. London has rubber paying blocks on two streets.

Perhaps the most successful use of rubber for roads is its substitution for asphalt joints between sections of concrete. Two years' trial in New England indicates that rubber joints take up the expansion of concrete better than does asphalt, and eliminate the rhythmic bumping caused by projecting asphalt strips.

Elsewhere roads are growing harder instead of more rubbery. Aluminum highways have provided Germany with smooth riding, with the added advantage of helping the light problem with their higher reflecting power. Powdered aluminum, mixed with the usual surfaces of tar or asphalt, prevents to some extent the softness of those substances during hot weather.

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sheep supplied wool for clothing and the mountain woman was a skillful spinner and weaver.

"When cows and oxen became old and useless, shoes were made of their hides. Bears, deer, and birds, brought down with five-foot rifles or caught in traps, supplied the family meat platter. 'Sweetnin'' was produced from sorghum (see illustration, below). A corn patch, clinging to the steep mountain slopes, yielded meal for cornbread.

Trundle Beds and Spinning Wheels Made at Home

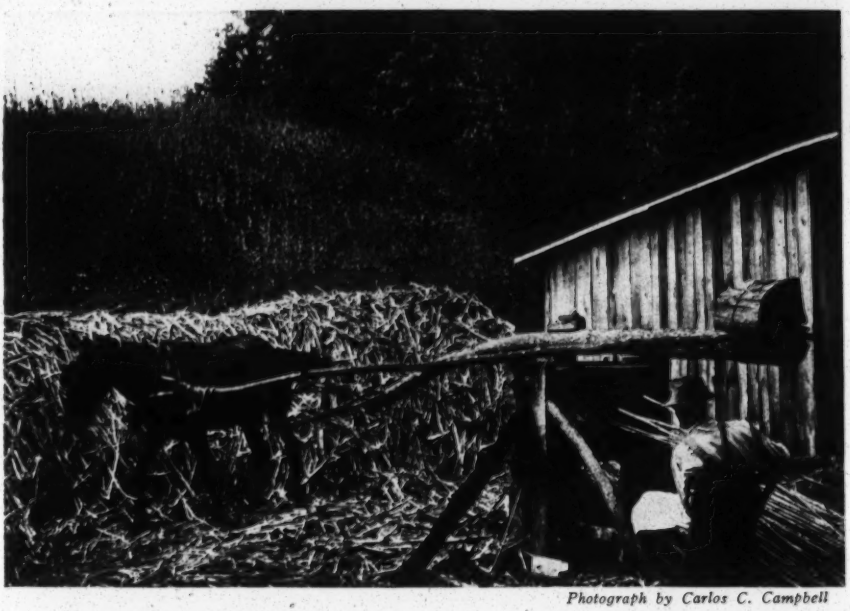
"While the mountain family is no longer isolated, the atmosphere of decades ago still pervades the typical home. Everything I observed in and around one cabin was homemade, except a denim skirt worn by a mountain woman, a frayed newspaper on a fly-chasing apparatus swinging over the dining table, a few enamel cooking utensils, a gaudy 'ad' for a medicine, a mattock, and an ax. The trundle beds, high-backed chairs, spinning wheel, and loom had been made on the spot and of native wood a quarter of a century before my visit.

"At another cabin in the same neighborhood, I found a hoe fashioned from a piece of wagon spring up on a mountain road, and a knife that had been hammered out of a steel saw blade salvaged from the debris of an abandoned lumber camp."

Note: The Great Smoky Mountains National Park, an all-year vacation spot, is described in "Rambling Around the Roof of Eastern America," *National Geographic Magazine*, August, 1936.

See also "A Patriotic Pilgrimage to Eastern National Parks," June, 1934; "Pirate Rivers and Their Prizes," July, 1926; and "Motor-Coaching Through North Carolina," May, 1926.

Bulletin No. 4, December 7, 1936.



Photograph by Carlos C. Campbell

THE HORSE GOES ROUND AND ROUND, AND THE SWEETNIN' COMES OUT HERE

Mountaineers of the Great Smokies, until recently isolated from the Machine Age, devised their own primitive but effective "machinery." A horse supplies motive power for their sorghum press; a chunk of wood serves as counterbalance. The press is as home-grown as the sorghum. Called "cane," this local substitute for sugar cane is fed by hand into the press, and the thick sweet juice is afterwards boiled down in an open-air vat.

A new Iron Age has been ushered in by Paris, where cast iron plates of different types have been laid along an avenue to test which kind is more durable.

The Province of Mysore, India, has sweetened the lot of the traveler by spreading molasses over its roads. Mixed with surface soil, molasses sheds rain and curbs dust.

Efforts to try new highway materials have developed unusual mixtures, such as soap with asphalt. One process solidifies sand into solid ground by chemical treatment. Roads are made of whatever material is most plentiful in the neighborhood—oyster shells, crushed slate, crushed marble. A West Virginia road and one in Colorado are built of gold, or at least of ore containing low contents of "pay dirt."

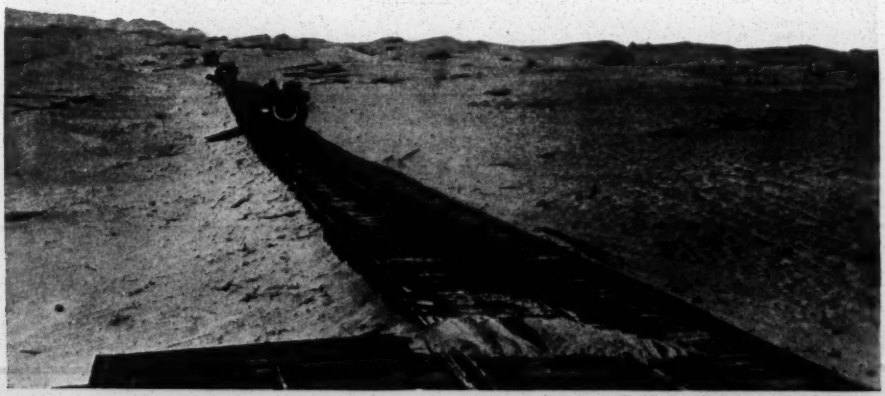
Tin Can Touring De Luxe

A tin can road was provided in Georgia when an engineer dumped old tin cans on a road in construction, ran the steam roller over them, and packed sand and soil on top.

Such unusual road surfaces are no stranger today than was the early macadamized covering, when the United States gave it a tryout on the old turnpike in Pennsylvania between Lancaster and Philadelphia. Concrete for a road, an idea that startled the country not forty years ago, was given a gingerly trial in Bellefontaine, Ohio—just one block. Now both surfacings are extensively used, as are asphalt, tar, stone, brick, wood blocks, cinders, and gravel.

See in the GEOGRAPHIC NEWS BULLETINS: "Asphalt, from Mummies to the Mississippi," week of November 19, 1934.

Bulletin No. 5, December 7, 1936.



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A PIONEER ROAD SURFACE THAT WORKED ITSELF TO PIECES

Plank roads, most of which now survive only in name or in splinters, were tried out on a large scale in the United States during the 19th century, and vigorously criticised even then. Developed in Russia where wood was plentiful, the traffic boardwalk was copied in a road near Syracuse, New York, a century ago, and soon this State had 2,000 miles of road floored usually with yellow pine planks. Enthusiasm waned, however, when they showed symptoms of wearing out every seven years. It was in the desert, where other surfacings did not compete with it, nor rain decay it, that the plank road lingered on, and some of the cross-continent automobile pioneers traveled across California deserts like this only a few years ago. The turnout in the left foreground was provided to give automobiles space enough to pass other cars.

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